

BTEC Assignment Brief

Qualification	Pearson BTEC Level 3 National Diploma in Engineering Pearson BTEC Level 3 National Diploma in Electrical/Electronic Engineering Pearson BTEC Level 3 National Diploma in Mechanical Engineering Pearson BTEC Level 3 National Diploma in Computer Engineering Pearson BTEC Level 3 National Diploma in Manufacturing Engineering Pearson BTEC Level 3 National Diploma in Aeronautical Engineering Pearson BTEC Level 3 National Extended Diploma in Engineering Pearson BTEC Level 3 National Extended Diploma in Electrical/Electronic Engineering Pearson BTEC Level 3 National Extended Diploma in Mechanical Engineering Pearson BTEC Level 3 National Extended Diploma in Computer Engineering Pearson BTEC Level 3 National Extended Diploma in Manufacturing Engineering Pearson BTEC Level 3 National Extended Diploma in Aeronautical Engineering
Unit number and title	Unit 56: Industrial Robotics
Learning aim(s)	A Investigate the health and safety and maintenance requirements associated with industrial robots.
Assignment title	1 Safety systems and maintenance requirements for an industrial robot or robot work cell
Assessor	
Issue date	
Hand in deadline	
Vocational Scenario or Context	You are currently part-way through an engineering apprenticeship with a large company that uses industrial robots in a variety of applications. Part of your work will require you to carry out maintenance activities on robots. As part of your apprenticeship you need to provide evidence that you can work safely, identifying dangers associated with working with robots, and that you are aware of relevant regulations and maintenance routines.

Task 1	To do this: Your tutor will provide you with a suitable industrial robots or robotic work cell to investigate. You need to research: • the health and safety requirements for the safe operation of the robots or work cell, and • the maintenance procedures for the robots or work cell. You then need to: Produce a balanced evaluation of the benefits and limitations of the safety systems and maintenance requirements in place for the given industrial robots. Your report should include: a) the health and safety issues for the industrial robots or work cell, relating your findings to relevant legislation and regulations. Consider the safety systems that are included and their effectiveness in preventing harm to individuals and how they could be improved. b) the maintenance procedures for the industrial robots or work cell and consider the overall effectiveness of the maintenance procedures and how they could be improved.
Checklist of evidence required	A referenced report (or presentation) that provides a balanced evaluation of an industrial robots, including; • Identification of the robots to be investigated • Relevant regulations/legislation • Human dangers • Safety systems and suggestions for improvements The referenced report should also include an evaluation of maintenance procedures, including; • Inspection routines • Spare parts • Tools and test equipment • Effectiveness and suggestions of improvements that could be made.
Criteria covered by this task:	
Unit/Criteria reference	To achieve the criteria you must show that you are able to:
A.D1	Evaluate the maintenance procedures and use a safety system for a specific application of industrial robots.
A.M1	Justify the benefits of maintenance procedures and the use of a safety system for a specific application of industrial robots.
A.P1	Describe the health and safety requirements for the safe operation of given industrial robots.
A.P2	Describe maintenance procedures on given industrial robots.
Sources of information to support you with this Assignment	HSE, HSG43, Industrial Robot Safety, no longer in print HSE, Collision and injury criteria when working with collaborative robots (RR906), 2016; http://www.hse.gov.uk/research/rrpdf/rr906.pdf Industrial Technology, D Whitall (Fanuc), Top tips for staying safe when working alongside robots, https://www.industrialtechnology.co.uk/products--



	top-tips-for-staying-safe-when-working-alongside-robots.html Robotiq, S Bouchard, Industrial robots: What are the different types? 2014 https://blog.robotiq.com/bid/63528/What-are-the-different-types-of-industrial-robots
Other assessment materials attached to this Assignment Brief	Robot/installation specification Access to relevant regulations Maintenance Standard Operating Procedures Maintenance Report Forms